

DESIGN PARAMETERS

For any project to be successful, the project goals must be clear. Therefore, with the assistance of TxDOT, the Urban Design Team set the following parameters to guide the design process.

Driver Confidence

The easier it is for drivers to understand where they are going, the safer the road is for all motorists. So it is critical that the highway be designed to eliminate unnecessary visual distractions. It is also important that drivers be able to quickly identify their route and destination; i.e., find their off-ramp. Since so much occurs within the 21 miles of the corridor, the monotony associated with highway driving should not be a factor.

Cost Effective Construction

A design that incorporates standard construction elements and techniques is more cost effective than designs with unusual construction elements and techniques. The team's design component must work closely with the engineering component to make sure that each alternative is designed from a kit of constructible parts, standard when possible.

Constructibility

The design also must be able to be implemented with standard highway construction techniques. Above all, it must be constructible in phases. Since the project's purpose is to increase the flow of traffic, it is crucial to reduce the congestion due to construction by mitigating the use of urban elements that would contribute to a prolonged construction schedule.

Long Term Maintenance

Because this is a project for the long term, the design team must consider long term maintenance. How effectively the facility performs for many years will reflect upon the success of the LBJ Corridor itself.

DESIGN OBJECTIVES

Given the massive scale and complexity of the LBJ Corridor, it is necessary to focus on a set of objectives that is somewhat unique to traditional architectural, landscape, and urban design principles. The Urban Design Team used the following objectives to facilitate the design process.

Visual Organization

Driver confidence can be enhanced by carefully organizing the many visual elements required along the highway. A well coordinated solution can both adhere to the strict state standards and provide a visually appealing driving experience.

Timeless Design

The simple fact that the construction of the LBJ Corridor itself is expected to require 15 to 20 years, means that a timeless design approach is necessary. The construction and refinement of this highway is intended to serve the public for generations and requires forward thinking that transcends fad or fashion.

Scale Appropriate to Speed

While the main roadway is designed for high speed travel, the frontage roads, bridges, and links across the highway will be designed for slow speeds, even pedestrian use. To have the desired effect, the scale and texture of the individual elements must consider the different speeds at which each will be seen.

Static and Dynamic Perspective

Besides being seen at different speeds, the various elements of the highway will be seen from both static and dynamic perspectives. The view of the highway from a static point above will be quite different from the dynamic view from the highway itself.

Views to and from the Road

Likewise, the views to and from the road will vary greatly, depending on different grade conditions. When the main roadway is below the frontage road, special considerations will be needed to help motorists identify their location. In commercial areas, the views to and from the road will need to be enhanced, and in residential areas they will need to be screened. In short, the edges of the highway will be modified to suit the immediate context, making the highway a positive aspect of the community.

LBJ Corridor Image

With the widening of the highway throughout the LBJ Corridor, the highway's image will become more urban in nature. It is important that the many varying segments be given a unified look. Careful design of signage, lighting, and other built elements will accomplish this, at the same time complementing the adjoining communities.

DESIGN ELEMENTS

The various design elements, when taken together, create the image of the proposed LBJ Corridor. For many of those elements there will be approved standards. The image of the Corridor will be achieved through the use of elements that will define the boundaries of the road and connections across the road, as well as provide lighting, signage, and landscaping.

Built Elements

Bridges Whether underpass or overpass, the intersection of highway and surface street results in that unique built element: *the bridge*. When seen at high speeds along the highway, a bridge is a momentary focal point, giving motorists clues about the community above. Although the bridges along the corridor are of the same design, distinctive elements on bridges can serve as landmarks, helping drivers determine their location.

The overpass, whether viewed from the surface street or from the cross street below, helps identify the image of the highway. Seen at much slower speeds, the detail in the columns and abutments can enhance that image. Attention to the underside of the bridge and its connection to the abutments and columns will provide visual clarity and organization, thus enhancing the overall appearance of the project.

Retaining Walls Through the widening of the highway, the retaining wall takes on greater importance. Existing embankments of grass will give way to retaining walls, built to provide texture and strength, yet to allow the planting of vegetation to soften the hard edges of the road. The retaining wall as seen from the highway side will be passed by quickly and will serve to reduce visual clutter, enabling the motorist to focus on the task at hand. On the frontage road, the retaining wall will be passed by more slowly and may be viewed more closely. In either circumstance, the retaining wall will be designed to be attractive and a cohesive element of the overall highway design.

Noise Abatement Walls The noise abatement walls along the frontage roads will be seen as swiftly moving background to the highway retaining wall. To pedestrians and slower traffic on the frontage roads, they will be seen more intimately. The walls must be designed to allow for that difference, and to respond to the fact that they will become someone's backyard fence.

Barriers The State's standard safety barrier is a singular, fundamental element of the highway. It will profoundly influence the shape of the highway retaining wall and median. The profile of the barrier will be certain to shape the base of any wall immediately adjacent to traffic. The side away from the flow of traffic has a different shape and will offer a different set of design opportunities.

Signage

The most important source of information for the driver is the road sign. The importance increases when landmarks are obscured or nonexistent. Since driver safety and confidence are of primary concern, the organiza-

tion and visibility of the signage are fundamental to the project. In sections where landmarks are visible, they will be helpful in reinforcing driver confidence and should be part of the overall design concept.

The scale and frequency of signs along the LBJ Corridor make them important visual elements, hence they should receive special attention. Although the sign panel has standardized design requirements, and the sign supports have particular precedents, there are still opportunities to express the LBJ Corridor image through signage.

The supports for the signs will have to be placed on structures, along the edges of the cantilevered frontage roads, in tunnels, and possibly on the retaining walls. In addition, there will be the standard poles along the side of the highway. Coordination of these many conditions will be important to the overall image.

Lighting

Proper lighting can profoundly enhance driver confidence, while uniform illumination under bridges, and in tunnels (where daylight is entirely absent), provides not only driver confidence but an important safety factor as well. Also, carefully chosen lighting on frontage roads can provide safety for motorists and pedestrians, while still respecting the needs of adjacent homes and local businesses.

These various lighting requirements will be met by a number of fixture types, all representative of the LBJ Corridor image. The rhythms of sign supports, lighting fixtures, and traffic signals on frontage roads, play an important role in the visual aesthetics of the roadway. When well designed and coordinated, these elements can enhance the overall view and function of the roadway system.

Cross Street and Frontage Road Streetscape

The frontage roads and the streets crossing the highway--where traffic is slower--call for a scale of design different from that of the main lanes. Because they are used by pedestrians and cyclists, and also are seen

from a more static perspective, these areas warrant a finer degree of detail.

This finer degree of detail can be attained with such elements as paving, lights, banners, safety bollards, public art, and street furnishings. These elements can lend a human scale to the pedestrian zones, making them clearly identifiable and enhancing safety.

Paving patterns and materials are integral parts of the highway design, and current technology provides a variety of cost-effective construction methods and materials. Without significantly increasing the cost, ordinary concrete can be made distinctive and aesthetically pleasing through the addition of pattern, texture, and color. Concrete pavers thus enhanced can be used to define pedestrian and vehicular zones, making intersections safer.

Landscaping

The delicate balance of nature requires us to replace as much of the vegetation as possible during the widening of the highway. Adding lanes means replacing vegetation with pavement. In the new design, the edges that are now grass covered will be too steep to replant, and should be replaced with terraced retaining walls designed to accommodate as much landscaping as possible.

As a design element, this landscaping will be essential to soften the harshness of the highway environment, and can create continuity and visual relief along the entire LBJ Corridor. Providing for an irrigation system by incorporating sleeves in key places during construction will allow for landscape design opportunities later.

CURRENT STANDARDS AND CONDITIONS

Throughout the LBJ Corridor, there are many current standards and conditions with respect to built elements, signage, lighting, streetscape, and landscape. Many of these will be retained, and many will be replaced. In either case, it is useful to study them before designing their replacements.

The noise abatement wall exists along the LBJ Corridor in a number of different versions. Plants in front of and contained within it can make the wall attractive.



Long-term aesthetic appeal requires coordination of wall and landscaping. How owners maintain the adjacent properties can affect the appearance of the highway.



In some cases, screening walls have been erected as a buffer between frontage roads and alleys serving adjacent properties. The ends and backs of the walls should be appropriately scaled for those adjacent properties.



Materials that foster easy, long term maintenance can help to preserve the aesthetic value of the noise abatement and screening walls.



While the cage over the pedestrian bridge enhances safety to the traffic below, the result is an unpleasant environment. Solutions can be provided to enhance pedestrian areas without compromising safety.



Although, currently, there are few vertical walls on the highway, a multitude of vertical surfaces are being proposed for this project. These will require careful treatment if they are to remain long-term, attractive elements in the community.



Because the number of roadway elements has increased, special coordination will be required for such things as median barriers, columns, abutments, and retaining walls.



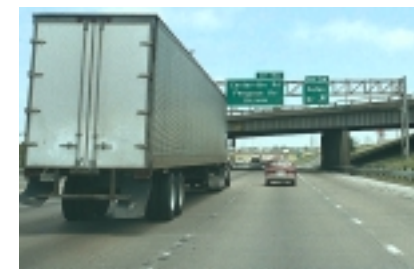
The standard LBJ overpass looks much as it did when it opened more than 25 years ago. The refinement of the Corridor will be most pronounced in those locations, affecting all visual elements--utilities, bridges, abutments, and landscaping.

Signs can sometimes be mounted directly on bridges, reducing the number of structures added to the roadway. To avoid unattractive static views, the signs should be coordinated with the design of the bridge, and provide only essential information.



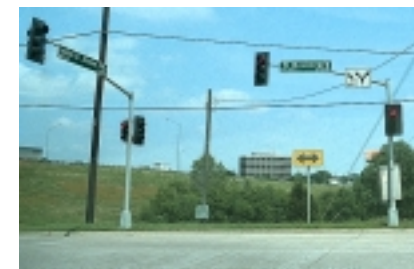
The standard highway sign is currently mounted on an open steel truss, supported by a solid vertical column when placed on one side of the highway. This allows driver information to be placed in the optimum location.

Careful placement of overhead signage can increase the visibility of necessary information despite potential traffic impediments. The location of driver information in the optimum location greatly enhances driver confidence.



In some locations, lighting is required for the sign to be legible at night. Fixtures can be mounted on the cantilevered truss, and provide the maximum amount of signage with the least amount of visual clutter.

On frontage roads and cross streets where traffic signals are required, coordinating street signage with signal supports can minimize visual distractions.



When necessary, the open steel truss is attached on both sides of the highway to vertical trusses, accommodating numerous signs, and providing additional driver information. However, the visible structure creates visual clutter.

On frontage roads and cross streets where stop signs are required, combining street signage with other useful driver information can help reduce visual clutter.





The high-mast lighting along LBJ continues to be an effective state standard. It is important to shield the light source to eliminate undesirable spill-over. Also, the placement of the masts should be coordinated with the installation of the retaining walls.

Currently there are some successful landscape buffer zones along the corridor. Here, a well manicured lawn and row of hedges turn a vacant lot into a handsome neighborhood park.



Frontage-road light standards, highway high-mast lighting, railroad crossing signals, and traffic signals should be coordinated to help eliminate visual distractions along the frontage roads and cross streets.

In addition to its natural ability to help maintain clean air, a buffer zone of trees can provide visual relief to the driver and offer shade and noise reduction to the adjacent property owner.



The rhythm of light standards along the highway creates a strong corridor sensation even in the daytime when the lights are not in use. The effect at night becomes even more pronounced.

Many edges of the existing highway are currently in their naturally vegetal state. With the widening of the roadway, the landscape of adjacent properties becomes increasingly important to the overall appearance.



Streetscape elements along LBJ are currently not common, existing mostly in the form of flags and banners. The infusion of these elements can enliven strategic sections of the proposed corridor.

Additional efforts by both TxDOT and adjacent property owners will benefit all parties in creating an environment that is attractive, as well as self-sustaining, and can serve the area for many years.



POCKETS OF DESIGN OPPORTUNITIES

In addition to the walls and bridges of the highway, there are many areas that warrant special attention. These pockets of design opportunities primarily involve connections to existing open spaces that would enhance the LBJ Corridor and create a cohesive environment on a larger scale, acknowledging other existing public-use plans.

While the goal of this project is not to create a new recreational trail similar to White Rock Creek Trail, the design of the proposed LBJ Corridor should allow for such trails to be created in the future.



A simple center for water, trash, and information helps keep the trail user informed and refreshed, and the trail clean. Creating a network of recreational trails can help to foster the use of alternative modes of transportation.



Crossings where the trails encounter the highway will create links across the corridor. These crossings should be designed to enhance the safety and pleasure of pedestrians and cyclists.



Along the proposed highway, continuing to provide bridges over existing waterways will allow the future completion of planned recreational trails.



Dallas has converted several railroad sections into recreational trails. To allow for future recreational trails under the proposed highway where railways are not being converted, open space alongside the railway should be considered.



A long segment of the corridor is bordered by an existing utility easement. The ground under the power lines could be preserved for future recreational trails. The City of Plano has created a system of trails in this manner.



To allow for future projects, including possibly a trail along this utility easement, provisions to cross LBJ should not be excluded in the current corridor plan.

As recreational trails develop, street crossings can become problematic. Topography and other existing features, such as rail crossings, can be utilized to minimize conflicts with traffic.



In many situations, relocating overhead utilities below grade would allow for enhanced landscaping of the corridor and the adjacent properties.

Samuell Garland Park, immediately adjacent to the highway, provides welcome visual relief to the motorist. Since it is strategically located, it could easily become a hub of activity if pedestrian access is maintained or enhanced.



Landscaping, coordinated with attractive noise abatement or retaining walls, provides a desirable environment for indigenous wildlife, while clearly defining the edge of the highway.

A by-product of recreational trails would be access to the light industrial zones for potential employees. This can help both expand the labor pool and improve the air quality.



Alleys between residences and the highway are common along the LBJ Corridor. These buffer zones can be made more useful, as well as more attractive.

The handling of increased storm water runoff should be designed with consideration for the appearance, especially where open channels are required.



The necessary interchanges along the LBJ Corridor result in vast areas of unused land under the many ramps. These areas can be used to advantage in creative ways for pocket parks, parking, and street art.